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# Novel noninvasive in situ probe of protein structure and dynamics

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**Abstract**
7-Amtryptophan is an ideal noninvasive in situ probe of protein structure and dynamics and provides an alternative to the use of ,tryptophan. 7-Azatryptophan affords a single-exponential fluorescence decay in aqueous solution, unlike tryptophan. Its absorption and fluorescence spectra are distinguishable from those of tryptophan. Its fluorescence spectrum and lifetime are sensitive to the environment. It can be used in peptide synthesis, and it can be incorporated into bacterial protein. These facts render 7-azatryptophan a unique probe that has the potential for widespread use.

**Keywords**
protein, tryptophan, chemical structure, methodology

**Disciplines**
Biochemistry, Biophysics, and Structural Biology | Chemistry

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